

09/845,454

F0662

CLAIMS

All pending claims are listed below.

1. (Currently Amended) A system for monitoring and regulating an etch process, comprising:
 - at least one etching component operative to etch at least one portion of a wafer;
 - an etch component driving system for driving the at least one etching component;
 - a system for directing a single beam of light toward onto one or more gratings located on at least one portion of the wafer;
 - an etch monitoring system operable to measure one or more etching parameters from light reflected from the one or more gratings; and
 - a processor operatively coupled to the etch monitoring system and the etch component driving system, wherein the processor receives an etching parameter data from the measuring system and analyzes the etching parameter data by comparing the etching parameter data to stored etching data to generate a feed-forward control data operative to control the at least one etching component.
2. (Original) The system of claim 1, the etch monitoring system further including a scatterometry system for processing the light reflected from the one or more gratings.
3. (Original) The system of claim 2, the processor being operatively coupled to the scatterometry system, the processor analyzing data received from the scatterometry system and producing an analyzed data and the processor controlling, at least in part, the at least one etching component *via* the etching component driving system based, at least in part, on the analyzed data.
4. (Currently Amended) The system of claim 3, wherein the etch process is at least one of descum etching, PR photoresist trim etching, BARE breakthrough anti-reflective coating etching and main etching.
5. (Original) The system of claim 3, wherein the etch process is at least one of an isotropic etch process and an anisotropic etch process.

09/845,454

F0662

6. (Original) The system of claim 3, wherein the etch process is a dry-etching process where the mechanism of etching has at least one of a physical basis, a chemical basis and a combination of physical and chemical bases.
7. (Original) The system of claim 6, wherein the dry-etching technique with a mechanism of etching as a physical basis is at least one of a glow-discharge sputtering technique and an ion-milling technique.
8. (Original) The system of claim 6, wherein the dry-etching technique with a mechanism of etching as a chemical basis is a plasma etching technique.
9. (Original) The system of claim 8, wherein the dry-etching technique with a combination of bases is at least one of a reactive ion etching (RIE) technique and an ion-enhanced etching technique.
10. (Original) The system of claim 2, the processor logically mapping the wafer into one or more grid blocks and making a determination of the acceptability of etching values in the one or more grid blocks.
11. (Original) The system of claim 10, wherein the processor determines the existence of unacceptable etching values for at least a portion of the wafer based on comparing one or more measured etching values to one or more stored etching values.
12. (Original) The system of claim 11, wherein the processor employs a non-linear training system in computing feed-forward control data operable to adjust the at least one etching component.

09/845,454

F0662

25. (Original) A system for monitoring and regulating an trim process, comprising:
means for partitioning a wafer into one or more grid blocks;
scatterometry means for sensing the acceptability of etching in at least one of the
one or more grid blocks;
means for controlling the etching of a wafer portion; and
means for selectively controlling the means for etching.